Cases of HIV Detectable in Semen, but Not Blood

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Five percent of HIV-positive men in a French study had detectable HIV in their semen even when no HIV was detectable in their blood, say the authors of a study published in the August 20 issue of *AIDS*. This result stands in contrast to a Swiss position paper earlier this year that declared it nearly impossible for an HIV positive person with no sexually transmitted infections (STIs) and an undetectable viral load in blood for at least six months to transmit HIV to an uninfected sex partner.

The authors of the Swiss paper stated at the time that they wanted to provide an accurate view of the HIV transmission risks for serodiscordant couples—where one partner has HIV and the other does not—who want to have children through natural conception. Currently, the only recommended method of conceiving a child for couples where the man is HIV positive and the woman is HIV negative is artificial insemination with semen that is proven free of HIV.

To determine the possible risk of HIV transmission for serodiscordant couples, Anne-Geneviève Marcelin, PharmD, PhD, from the Université Pierre & Marie Curie in Paris, and her colleagues examined paired blood and semen samples from 145 HIV-positive men who had used the services of an assisted reproductive agency in France. Some of the men gave multiple samples over time, so Marcelin's group was able to compare 264 paired samples in all.

Marcelin's team found that the amount of virus was almost always consistent between blood and semen samples. In 85 percent of the paired samples both the blood and the semen had undetectable levels of HIV. In 3 percent of the samples, both the blood and semen had HIV present. Seven of the 145 men, however, did have detectable virus in their semen, but none detectable in their blood sample. All of the men were on a stable antiretroviral (ARV) therapy regimen, and none had an STI. The men were also taking a wide variety of ARVs, including those known for getting into seminal fluid. All of them were also later able to provide a semen sample that was undetectable for HIV.

The authors point out that these men could have infected their female partners if they had attempted conception through unprotected sex when they had detectable virus in their semen, but not in blood. The researchers give several reasons for possible fluctuations in seminal HIV levels, including undetected STIs, adherence challenges and ARVs that fail to penetrate seminal fluid. Other reproductive specialists who work with serodiscordant couples have pointed out that

prostate or urethra inflammation, which may not be due to any infection, could lead to increased HIV production, even in the presence of ARV drugs.
